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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/687,671	10/20/2003	Hou-Wei Lin	LINH3019/EM	9341
23364	7590	12/07/2006	EXAMINER	
BACON & THOMAS, PLLC 625 SLATERS LANE FOURTH FLOOR ALEXANDRIA, VA 22314			WARE, CICELY Q	
		ART UNIT	PAPER NUMBER	
			2611	

DATE MAILED: 12/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

SF

Office Action Summary	Application No.	Applicant(s)
	10/687,671	LIN ET AL.
	Examiner	Art Unit
	Cicely Ware	2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 20 October 2003.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-13 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 20 October 2003 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)	5) <input type="checkbox"/> Notice of Informal Patent Application
Paper No(s)/Mail Date <u>1</u> .	6) <input type="checkbox"/> Other: _____

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities:
 - a. Pg. 1, line 7, examiner suggests applicant insert all actual US Patent and US Patent Application numbers for clarification purposes.
 - b. Pg. 3, line 15, applicant has inserted an element number "10". Examiner suggests applicant delete "10" for clarification purposes.Appropriate correction is required.
2. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Objections

3. Claim 7 is objected to because of the following informalities:
 - a. With regard to claim 7, line 4, examiner suggests applicant delete "10" for clarification purposes.Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1, 7, 10 are rejected under 35 U.S.C. 102(e) as being anticipated by Agazzi et al. (US Patent Application 2003/007581).

(1) With regard to claim 1, Agazzi et al. discloses in (Fig. 2) a feedforward equalizer (FFE) (26) of a communication system comprising: an adaptive filter for filtering a receiving signal according to a transfer function including a plurality of adjustable constants to eliminate a pre-cursor inter-symbol interference (pre-ISI) of the receiving signal (Pg. 8, col. 1, lines 18-27, 46-60); and a digital auto-gain controller (DAGC) (34) coupled to the adaptive filter for adjusting the magnitude of the filtered receiving signal according to the transfer function (Pg. 8, col. 1, lines 46-60, col. 2, lines 42-51, Pg. 21, col. 1, lines 4-36); wherein the adjustable constants includes a main-tap and the value of the main-tap is predetermined (Figs. 29 A, 29B, Pg. 8, col. 2, lines 42-51, Pg. 21, col. 1, lines 4-36, Pg. 22, col. 1, lines 5-8, 25-43).

(2) With regard to claim 7, see rejection of claim 1. Agazzi et al. further discloses in (Fig. 2) a transceiver of a communication system, comprising: a front-end receiver for receiving a receiving signal (Pg. 8, col. 2, lines 11-20) and converting to a first signal

with a pre-cursor component and a post-cursor component (PG. 34, col. 1, lines 36-62, col. 2, lines 1-30); a noise canceller (232, 230) coupled to the front-end receiver for generating a second signal through eliminating the noise of the first signal; and a decoding system (38) coupled to the FFE (26) for decoding the third signal and eliminating the post-cursor component in the third signal (28, 42, 44) (Pg. 30, col. 2, lines 18-39, Pg. 34, col. 1, line 36-62, col. 2, lines 1-30).

(3) With regard to claim 10, claim 10 inherits all the limitations of claim 9. See rejection of claim 1.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 2, 3, 8, 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Agazzi et al. (US Patent Application 2003/007581) as applied to claims 1 and 7, in view of Shiue et al. (US Patent 6,816,548).

(1) With regard to claim 2, claim 2 inherits all the limitations of claim 1. However Agazzi et al. does not disclose wherein the adjustable constants further includes a first adjustable constant adjacent to the main-tap and the value of the first adjustable constant is predetermined.

However Shiue et al. discloses wherein the adjustable constants further includes a first adjustable constant adjacent to the main-tap and the value of the first adjustable constant is predetermined (col. 5, lines 58-67 – col. 6, lines 1-3).

Therefore it would have been obvious to one of ordinary skill in the art to modify Agazzi et al. in view of Shiue et al. to incorporate wherein the adjustable constants further includes a first adjustable constant adjacent to the main-tap and the value of the first adjustable constant is predetermined in order to efficiently use pre-cursor and post-cursor taps and adaptively use Feed-forward and Decision feedback filters in both blind and decision-directed modes (Shiue et al., col. 2 lines 52-55, col. 3, lines 3-4).

(2) With regard to claim 3, claim 3 inherits all the limitations of claim 1. Shiue et al. further discloses wherein the main-tap is predetermined to be 1 (col. 5, lines 58-67 – col. 6, lines 1-3).

Examiner asserts that Shiue et al. does not explicitly disclose wherein the main-tap is predetermined to be 1. However Shiue et al. discloses that upon as initial condition one tap value is reset to a predetermined non-zero initial value.

(3) With regard to claim 8, claim 8 inherits all the limitations of claim 7. See rejection of claim 2.

(4) With regard to claim 9, claim 9 inherits all the limitations of claim 7. See rejection of claim 3.

8. Claims 4-6, 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Agazzi et al. (US Patent Application 2003/007581) in view of Shiue et al. (US

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Patent 6,816,548) as applied to claims 1, 4, 7, 11, in further view of Examiner's Official Notice.

(1) With regard to claim 4, claim 4 inherits all the limitations of claim 1. However Agazzi et al. in combination with Shiue et al. do not explicitly disclose wherein the transfer function is

$\text{sub.0Z.sup.3+C.sub.1Z.sup.2+C.sub.2Z.sup.1+C.sub.3+C.sub.4Z.sup.-1+C.sub.5Z.sup.-2+C.sub.6Z.sup.-3}$, wherein C.sub.0, C.sub.1, C.sub.2, C.sub.3, C.sub.4, C.sub.5, and C.sub.6 are adjustable constants, Z is a delay element, and C.sub.3 is the main-tap.

However Examiner takes Official Notice to the fact that it is well known in the art that transfer function are a network of coefficients multiplied by a delay element (see Agazzi et al., Figs. 29A and 29B, Kunieda et al. US Patent 6,593,805, Fig. 13). The mathematical equation claimed by applicant is not patentable due to the fact any transfer function can produce any combination of coefficients and delay elements summed together.

Therefore claim 4 does not constitute patentability.

(2) With regard to claim 5, claim 5 inherits all the limitations of claim 4. Examiner takes Official Notice to the fact that coefficients of a transfer function can be any number.

Therefore claim 5 does not constitute patentability.

(3) With regard to claim 6, claim 6 inherits all the limitations of claim 4. Examiner takes Official Notice to the fact that coefficients of a transfer function can be any number.

Therefore claim 6 does not constitute patentability.

(4) With regard to claim 11, claim 11 inherits all the limitations of claim 7. Examiner takes Official Notice to the fact that it is well known in the art that transfer function are a network of coefficients multiplied by a delay element (see Agazzi et al., Figs. 29A and 29B, Kunieda et al. US Patent 6,593,805, Fig. 13). The mathematical equation claimed by applicant is not patentable due to the fact any transfer function can produce any combination of coefficients and delay elements summed together.

Therefore claim 11 does not constitute patentability.

(5) With regard to claim 12, claim 12 inherits all the limitations of claim 7. Examiner takes Official Notice to the fact that coefficients of a transfer function can be any number.

Therefore claim 12 does not constitute patentability.

(6) With regard to claim 13, claim 13 inherits all the limitations of claim 12. Examiner takes Official Notice to the fact that coefficients of a transfer function can be any number.

Therefore claim 13 does not constitute patentability.

Double Patenting

9. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the

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unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

10. Claim 7 is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of copending Application No. (2004/0091071). Although the conflicting claims are not identical, they are not patentably distinct from each other because:

With regard to claim 7 of the instant application, claim 1 of the copending application encompasses all the limitations of claim 7 of the instant application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Conclusion

11. The prior art made record of and not relied upon is considered pertinent to applicant's disclosure:

a. Konieda et al., US Patent 6,593,805, discloses a demodulation apparatus.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cicely Ware whose telephone number is 571-272-3047. The examiner can normally be reached on Monday – Friday, 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammed Ghayour can be reached on 571-272-3021. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

Cicely Ware

cqw
December 1, 2006

M. G.
MOHAMMED GHAYOUR
SUPERVISORY PATENT EXAMINER